

Fig. 1

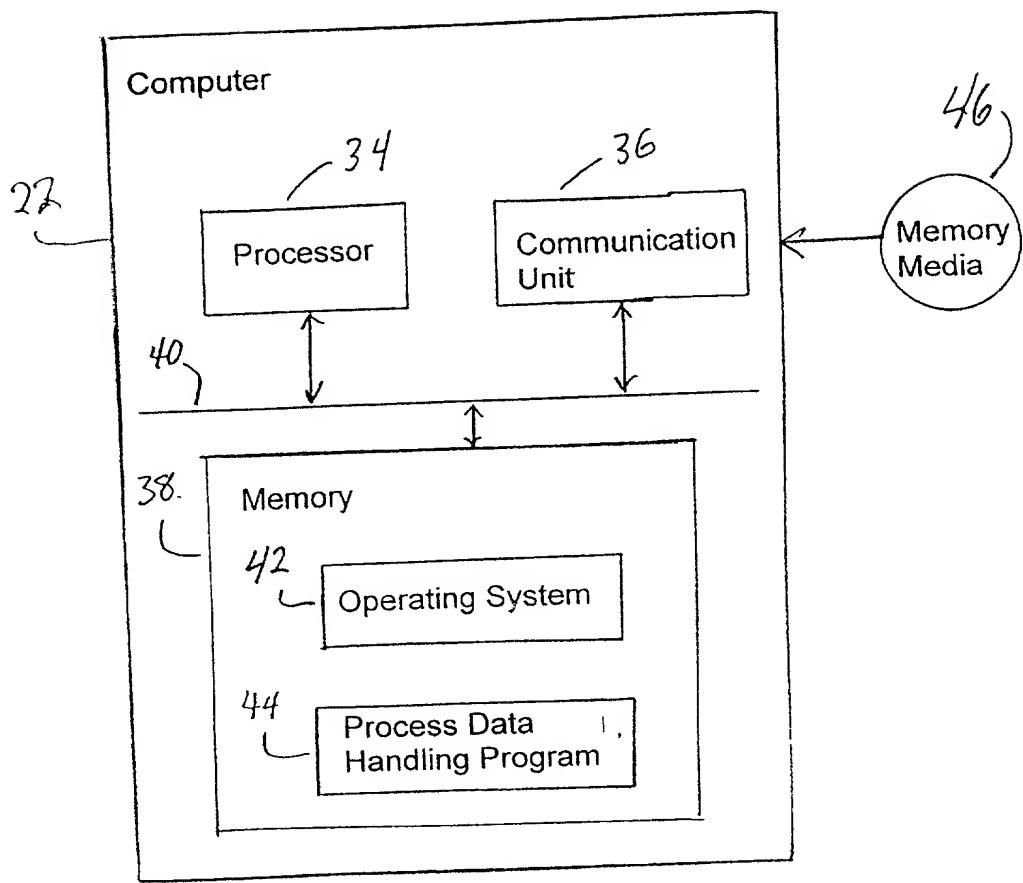


Fig. 2

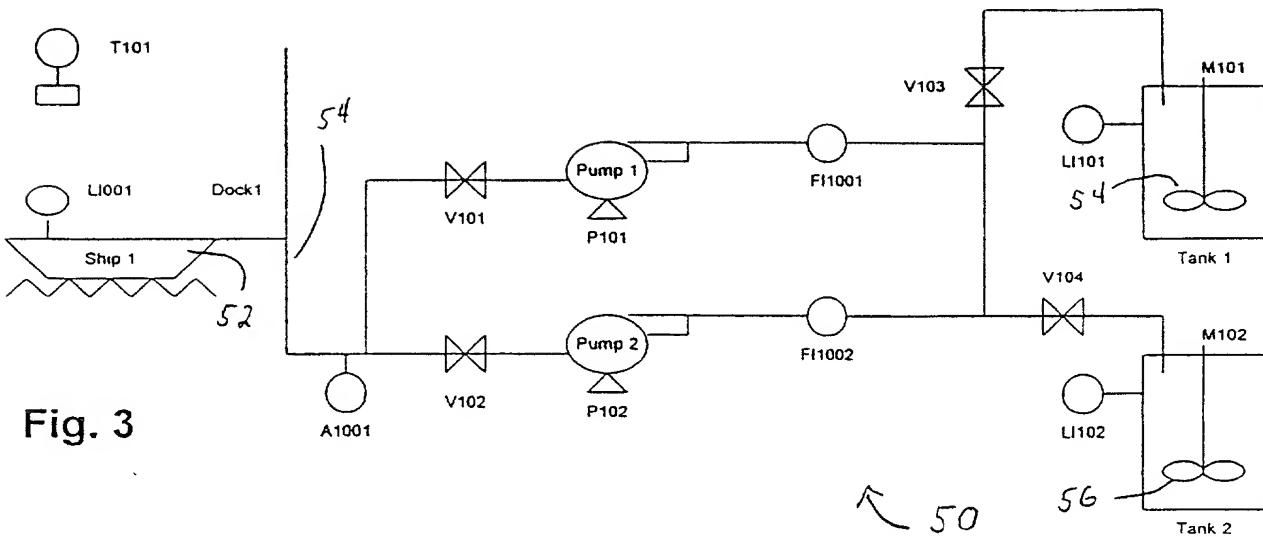


Fig. 3

Fig. 4

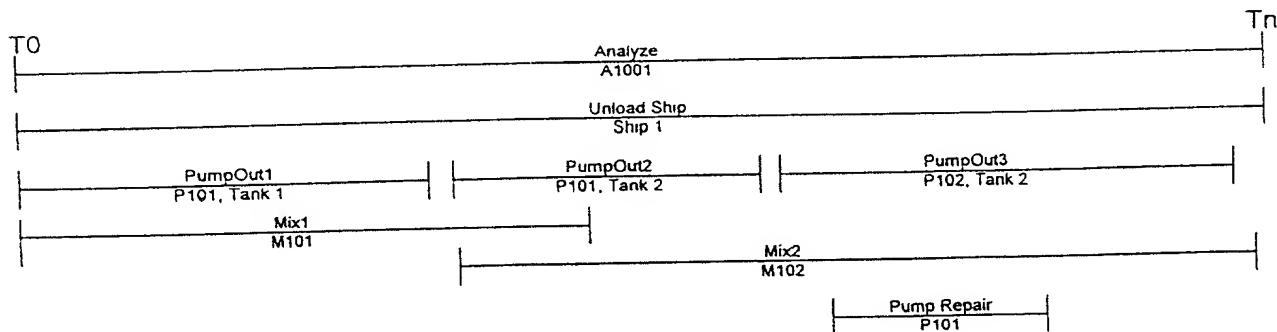
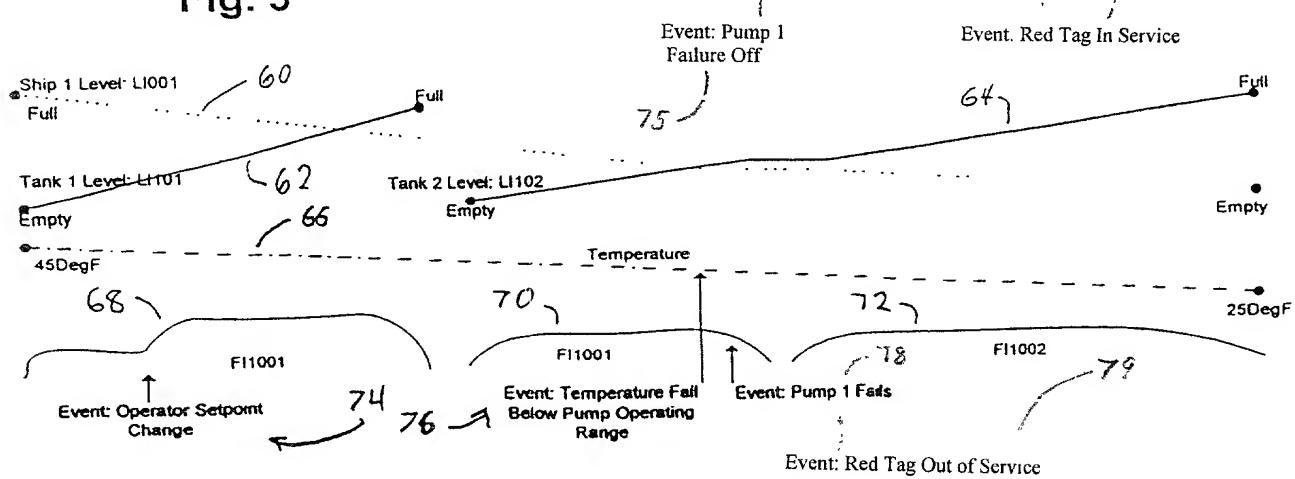


Fig. 5



80 ↗

Activity Type	Attribute Name	Static	Default Value
82 ↗	StartTime	N	
	EndTime	N	
	ID	N	
	Equipment	N	
	FlowRate	N	
	AccumValue	N	
	Source	Y	ProdSystem
Event Type	Attribute Name	Static	Default Value
84 ↗	TimeStamp	N	
	Resource	N	
	Message	N	
	State	N	
	Source	Y	OprSystem
OprChg	TimeStamp	N	
	Operator	N	
	Resource	N	
	Message	N	
	Command	N	
	Source	N	

Fig. 6

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### History

Activity Type	Start Time	End Time	ID	Equipment	FlowRate	AccumValue	Source
PumpOut	8/17/2000 10:00AM	8/17/2000 10:55AM	PumpOut1	Tank1	FI1001.PV	150,000	ProdSystem
PumpOut	8/17/2000 11:05AM	8/17/2000 11:45AM	PumpOut2	Tank2	FI1001.PV	65,000	ProdSystem
PumpOut	8/17/2000 12:05PM	8/17/2000 2:05PM	PumpOut3	Tank2	FI1002.PV	85,000	ProdSystem
Event Type	Time Stamp	Resource	Message	State	Source		
Alarm	8/17/2000 11:35AM	T101	LowTemp	On	OprSystem		
Alarm	8/17/2000 11:40AM	P101	PumpFail	On	OprSystem		
Alarm	8/17/2000 11:45AM	P101	PumpFail	Off	OprSystem		
Event Type	Time Stamp	Operator	Resource	Message	Command	Source	
OpRChg	8/17/2000 10:20AM	JOE	P101	Speed		50	OprSystem
Event Type	Time Stamp	Operator	Device	Message	Command	Source	
OpRChg	8/17/2000 12:35PM	FRED	PMP101	RedTag	OutOfService	MainSystem	
OpRChg	8/17/2000 1:35PM	FRED	PMP101	RedTag	InService	MainSystem	

Fig. 7

Instance					
PumpOut Activities					
Start Time	End Time	ID	Equipment	FlowRate	Accum\Value
8/17/2000 10:00AM	8/17/2000 10:55AM	PumpOut1	Tank1	FI1001.PV	150,000
8/17/2000 11:05AM	8/17/2000 11:45AM	PumpOut2	Tank2	FI1001.PV	65,000
8/17/2000 12:05PM	8/17/2000 2:05PM	PumpOut3	Tank2	FI1002.PV	85,000

Alarm Events					
Time Stamp	Resource	Message	State	Source	
8/17/2000 11:35AM	T101	LowTemp	On	OprSystem	90
8/17/2000 11:40AM	P101	PumpFail	On	OprSystem	
8/17/2000 11:45AM	P101	PumpFail	Off	OprSystem	92

OprChg Events					
Time Stamp	Operator	Resource	Message	Command	Source
8/17/2000 10:20AM	JOE	P101	Speed	50	OprSystem
8/17/2000 12:35PM	FRED	PPM101	RedTag	OutOfService	MaintSystem
8/17/2000 1:35PM	FRED	PPM101	RedTag	InService	MainSystem

Fig. 8

**Retreival**

<b>Rows</b>			
Event Type	Time Stamp	Attribute Name	Attribute Value
Alarm	8/17/2000 11.35AM	Resource	T101
		Message	LowTemp
		State	On
		Source	OprSystem
		Resource	P101
Alarm	8/17/2000 11.40AM	Message	PumpFail
		State	On
		Source	OprSystem
		Resource	P101
Alarm	8/17/2000 11.45AM	Message	PumpFail
		State	Off
		Source	OprSystem
		Operator	JOE
		Resource	P101
OprChg	8/17/2000 10:20AM	Message	Speed
		Command	50
		Source	OprSystem
		operator	FRED
		Resource	PMP101
OprChg	8/17/2000 12.35PM	Message	RedTag
		Command	OutOfService
		Source	MaintSystem
		Operator	FRED
		Resource	PMP101
OprChg	8/17/2000 1:35PM	Message	RedTag
		Command	InService
		Source	MaintSystem

**Fig. 9**

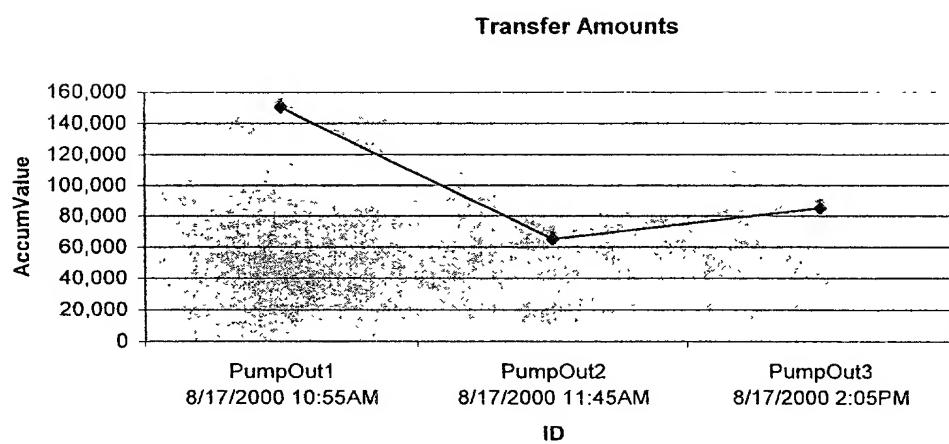
<i>Columns</i>		Event Type	Time Stamp	Operator	Resource	Message	Command	State	Source
Alarm		8/17/2000 11:35AM			T101	LowTemp		On	OprSystem
Alarm		8/17/2000 11:40AM			P101	PumpFail		On	OprSystem
Alarm		8/17/2000 11:45AM			P101	PumpFail		Off	OprSystem
OprChg		8/17/2000 10:20AM		JOE	P101	Speed		50	OprSystem
OprChg		8/17/2000 12:35PM		FRED	PMP101	RedTag		OutOfService	MaintSystem
OprChg		8/17/2000 1:35PM		FRED	PMP101	RedTag		InService	MaintSystem

**Fig. 10**

**Chart**

Activity Type	End Time	ID	AccumValue
PumpOut	8/17/2000 10:55AM	PumpOut1	150,000
PumpOut	8/17/2000 11:45AM	PumpOut2	65,000
PumpOut	8/17/2000 2:05PM	PumpOut3	85,000

**Fig. 11**



**Fig. 12**

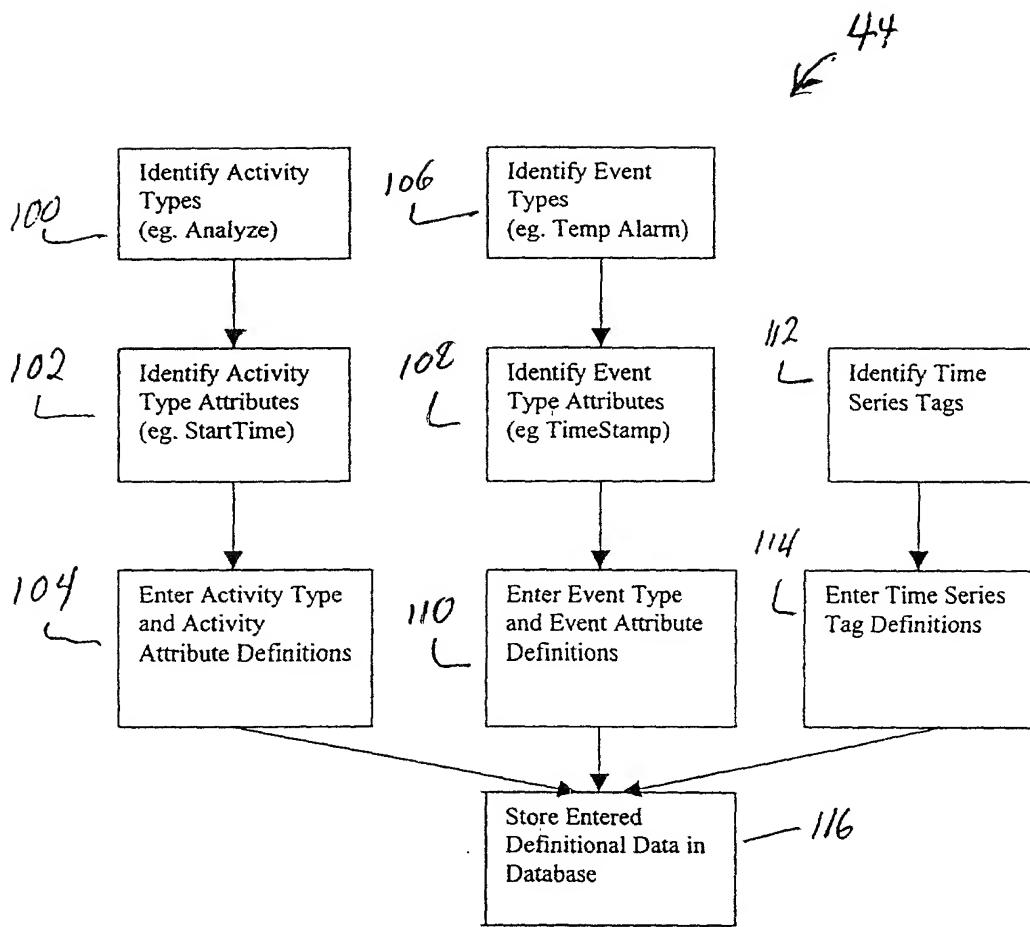


Fig. 13

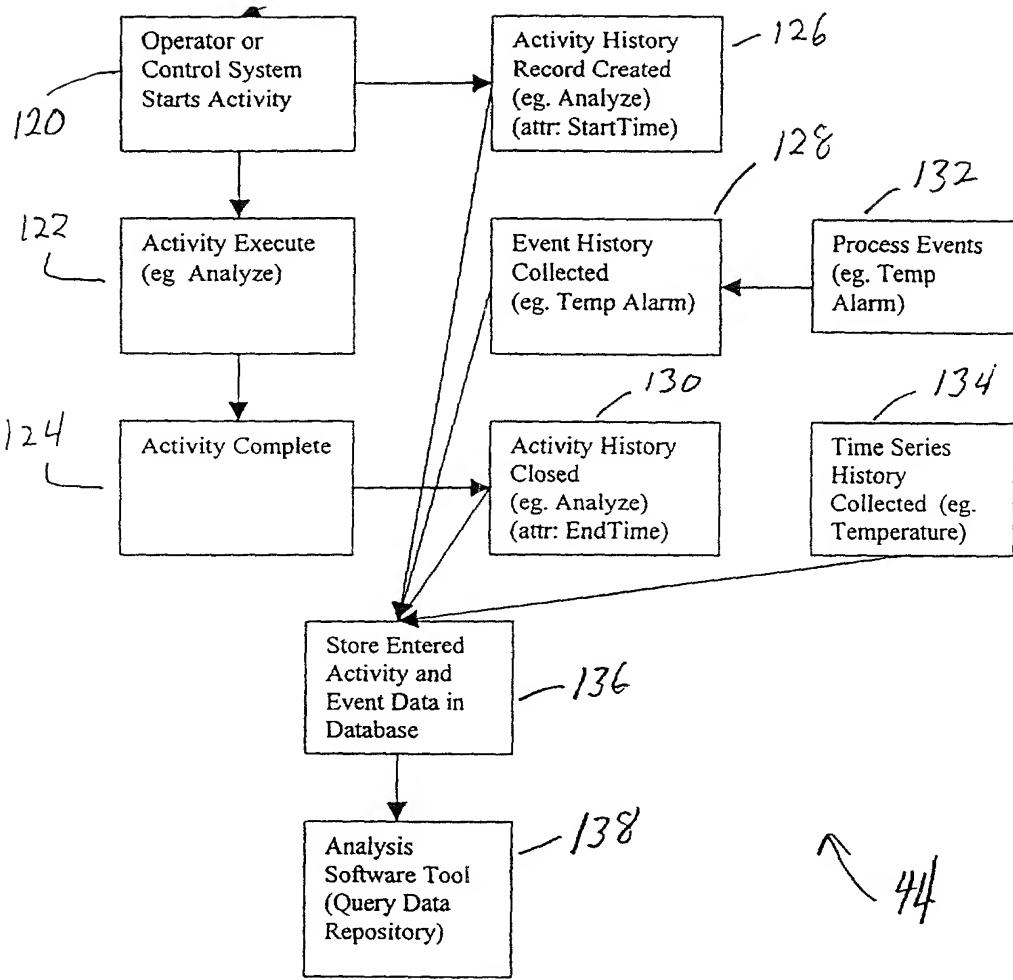


Fig. 14